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Shah et al.

(54) **HIGH-DENSITY PERCUTANEOUS CHRONIC CONNECTOR FOR NEURAL PROSTHETICS**

(71) Applicants: **Kedar G. Shah**, San Francisco, CA (US); **William J. Bennett**, Livermore, CA (US); **Satinderpall S. Pannu**, Pleasanton, CA (US)

(72) Inventors: **Kedar G. Shah**, San Francisco, CA (US); **William J. Bennett**, Livermore, CA (US); **Satinderpall S. Pannu**, Pleasanton, CA (US)

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(57) **ABSTRACT**

A high density percutaneous chronic connector, having first and second connector structures each having an array of magnets surrounding a mounting cavity. A first electrical feedthrough array is seated in the mounting cavity of the first connector structure and a second electrical feedthrough array is seated in the mounting cavity of the second connector structure, with a a feedthough interconnect matrix positioned between a top side of the first electrical feedthrough array and a bottom side of the second electrical feedthrough array to electrically connect the first electrical feedthrough array to the second electrical feedthrough array. The two arrays of magnets are arranged to attract in a first angular position which connects the first and second connector structures together and electrically connects the percutaneously connected device to the external electronics, and to repel in a second angular position to facilitate removal of the second connector structure from the first connector structure.